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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,152	09/11/2003	Richard C. Helmstetter	PU2175	2151
23454	7590	02/24/2005	EXAMINER	
CALLAWAY GOLF COMPANY 2180 RUTHERFORD ROAD CARLSBAD, CA 92008-7328			BLAU, STEPHEN LUTHER	
			ART UNIT	PAPER NUMBER
			3711	

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/605,152	Applicant(s) HELMSTETTER ET AL.	
	Examiner Stephen L. Blau	Art Unit 3711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 1 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Canceling claim 6 is agreed with and the objection is removed.
2. Claim 1 is objected to because of the following informalities: There are duplicate terms of "a front wall" in lines 19-20. Appropriate correction is required.

Priority

3. This application lacks the necessary reference to the prior application. The current status of all nonprovisional parent applications referenced should be included. The patent number needs to be updated for application 10/063,359.

Claim Objections

4. Claims 1 and 5 are objected to because of the following informalities: The statement "the top wall covers less 33% of the open cavity" appears to be missing the word --than--. Appropriate correction is required.

Specification

5. With respect to paragraph (0010) the change to the specification are agreed with.

6. The specification is object to under 37 C.F.R. rule 1.71 for not being written to enable one skilled in the art to make the same. Paragraph (0018) with respect to the fairway woods does not disclose the specifics of what consists of the volume. Since these heads have a hollow cavity open to the outside it seems that the cavity cannot count towards the volume yet the disclosed volume seems to be similar to a wood head without a cavity open to the outside. The amendment dated 22 November 2004 only removed this objection to a driver. The same objection still exists for fairway woods.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In claims 1 and 5, it is uncertain what the volume consists of since there is a cavity open to

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the outside. Is the cavity part of the head volume? The volume claimed appears to be similar to a hollow head with the hollow cavity not open to the outside. Claims 2-4 are rejected for depending on a rejected base claim.

Double Patenting

9. The terminal disclaimer has been approved and entered and the rejections under the judicially created doctrine of obviousness-type double patenting have been removed.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Uchiyama, JP 2000-15765, Chappell, Davis, Sacco and Miyamoto.

Wilson discloses a metal head (Title) having a front wall, a bottom wall, a top wall (Fig. 7), a ribbon wall (Fig. 1), a bottom wall extending a greater distance rearward than the top wall in the form of the middle of the face (Fig. 7), a bottom wall and the top wall

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defining an open cavity (Figs. 4, 7), a loft (Fig. 7), and a top wall covering less than 33 % of the open cavity (Fig. 7).

Wilson lacks a driver having a loft angle of 7-18 degrees, a moment of inertia for a driver through Izz axis of the center of gravity of at least 2900 grams centimeter squared, a plurality of fairway wood having a loft angle of 19-30 degrees, a moment of inertia for a plurality of fairway woods through Izz axis of the center of gravity of at least 2900 grams centimeter squared, fairway woods having a volume less than 300 cc, a driver and each of a plurality of fairway woods having an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front wall and the hosel offset is approximately zero, a plurality of irons having a front wall, a bottom wall extending rearward from a bottom end of a front wall, a top wall extending rearward from a top end of a front wall, an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front wall and the hosel offset is approximately zero and irons having a loft from 29-60 degrees, and fairway woods having a volume less than 300 cc.

Uchiyama discloses a wood driver having a loft of 16 degrees (Col. 4, Lns. 4-5). In view of the patent of Uchiyama it would have been obvious to modify the club of Wilson to have a driver having a loft of 7-18 degrees in order to provide a driver and to maximize hitting distance of a driver by maximizing height in a trajectory of a hit ball for a golfer who tends to hit a ball to low. In addition, it would have been obvious to modify the head of Wilson to include a driver in order to utilize that advantages of Wilson for a driver.

JP 2000-157651 discloses a wood head having a moment of inertia I_{zz} in the form of Ax of 3700 g-cm^2 (Col. 3, Lns. 30-50, Verbal Translation) about a vertical axis Z through the center of gravity of a head (Abstract) in order to ensure the I_{zz} is not too low and the flying distance and direction become unstable or too high and it is difficult to keep the top sole direction inertia moment (Solution). In view of the patent of JP 2000-157651 it would have been obvious to modify the head of Wilson to have wood heads of a driver and fairway woods to have a moment of inertia I_{zz} of at least 3700 g-cm^2 about a vertical axis Z through the center of gravity of a head in order to have a stable flying distance and direction and keep the top sole direction inertia moment.

Chappell discloses fairway woods having a loft angle of 19-30 degrees (Col. 7, Lns. 50-60, Clubs number 5 and 7). In view of the patent of Chappell it would have been obvious to modify the woods of Wilson to include fairway woods having a loft angle of 19-30 degrees in order to have woods which are more accurate than a driver to select from while playing a round of golf. In addition, it would have been obvious to modify the head of Wilson to include fairway woods in order to utilize that advantages of Wilson for fairway woods.

Davis discloses a driver and each of a plurality of fairway woods having an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front wall and the hosel offset is approximately zero (Fig. 12). In view of the patent of Davis it would have been obvious to modify the set of woods of Wilson to have a driver and each of a plurality of fairway woods having an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front

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wall and the hosel offset is approximately zero in order provide a set of woods to a professional who does not need an offset to maintain his hand forward of the face at impact.

Miyamoto discloses fairway woods having a volume less than 300 cc (Table 2). In view of the patent of Miyamoto it would have been obvious to modify the set of woods of Wilson to have fairway woods having a volume less than 300 cc in order to utilize volumes for a set of fairway woods used in the market place.

Sacco discloses a plurality of irons having a front wall, a bottom wall extending rearward from a bottom end of a front wall, a top wall extending rearward from a top end of a front wall (Figs. 6-7), and a loft from 29-60 degrees (Col. 6, Lns. 40-46) having an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front wall and the hosel offset is approximately zero (Col. 7, Lns. 7-10). In view of the patent of Sacco it would have been obvious to modify the set of clubs of Wilson to have a plurality of irons having a front wall, a bottom wall extending rearward from a bottom end of a front wall, a top wall extending rearward from a top end of a front wall and a loft from 29-60 degrees having an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front wall and the hosel offset being approximately zero in order provide irons with different ranges than woods for a professional who does not need an offset to maintain his hand forward of the face at impact.

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12. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Uchiyama, JP 2000-15765, Chappell, Davis, Sacco and Miyamoto as applied to claim 1 above, and further in view of Burrows.

Wilson lacks a driver and plurality of fairway woods composed of stainless steel or titanium alloy. Burrows disclose metal type wood heads (Col. 1, Lns. 52-62) being composed of stainless steel or titanium alloy (Col. 1, Lns. 63-67). In view of the patent of Burrows it would have been obvious to modify the woods of Wilson to be composed of stainless steel or titanium alloy in order to utilize the advantages of these materials for a wood head.

13. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Uchiyama, JP 2000-15765, Chappell, Davis, Sacco and Miyamoto as applied to claim 1 above, and further in view of Kilshaw.

Wilson lacks a driver and each of the plurality of fairway woods having an equal face progression. Kilshaw discloses a set of wood shafts having the same tip external diameter (Tables 2-3). In view of the patents of Kilshaw and Davis it would have been obvious to have a driver and each of the plurality of fairway woods having an equal face progression in order to use the same size hosel for each of the woods in a set and to reduce the different number of parts needed to be designed and manufactured for a set of woods.

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14. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mahaffey in view of Uchiyama, JP 2000-15765, Chappell, Davis, Sacco and Miyamoto.

Mahaffey discloses a metal head (Col. 3, Lns. 30-35) having a front wall, a bottom wall, a top wall (Fig. 8), a ribbon wall (Fig. 7), a bottom wall extending a greater distance rearward than the top wall in the form of the middle of the face (Fig. 8), a bottom wall and the top wall defining an open cavity (Figs. 7-8), a loft (Fig. 8), a top wall covering less than 33 % of the open cavity (Figs. 7-8), and a titanium alloy (Col. 3, Lns. 15-20).

Mahaffey lacks a driver having a loft angle of 7-18 degrees, a moment of inertia for a driver through lzz axis of the center of gravity of at least 2900 grams centimeter squared, a plurality of fairway wood having a loft angle of 19-30 degrees, a moment of inertia for a plurality of fairway woods through lzz axis of the center of gravity of at least 2900 grams centimeter squared, fairway woods having a volume less than 300 cc, a driver and each of a plurality of fairway woods having an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front wall and the hosel offset is approximately zero, a plurality of irons having a front wall, a bottom wall extending rearward from a bottom end of a front wall, a top wall extending rearward from a top end of a front wall, an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front wall and the hosel offset is approximately zero and irons having a loft from 29-60 degrees, and fairway woods having a volume less than 300 cc.

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Uchiyama discloses a wood driver having a loft of 16 degrees (Col. 4, Lns. 4-5). In view of the patent of Uchiyama it would have been obvious to modify the club of Mahaffey to have a driver having a loft of 7-18 degrees in order to provide a driver and to maximize hitting distance of a driver by maximizing height in a trajectory of a hit ball for a golfer who tends to hit a ball too low. In addition, it would have been obvious to modify the head of Mahaffey to include a driver in order to utilize that advantages of Mahaffey for a driver.

JP-2000-157651 discloses a wood head having a moment of inertia I_{zz} in the form of Ax of 3700 g-cm² (Col. 3, Lns. 30-50, Verbal Translation) about a vertical axis Z through the center of gravity of a head (Abstract) in order to ensure the I_{zz} is not too low and the flying distance and direction become unstable or too high and it is difficult to keep the top sole direction inertia moment (Solution). In view of the patent of JP 2000-157651 it would have been obvious to modify the head of Mahaffey to have wood heads of a driver and fairway woods to have a moment of inertia I_{zz} of at least 3700 g-cm² about a vertical axis Z through the center of gravity of a head in order to have a stable flying distance and direction and keep the top sole direction inertia moment.

Chappell discloses fairway woods having a loft angle of 19-30 degrees (Col. 7, Lns. 50-60, Clubs number 5 and 7). In view of the patent of Chappell it would have been obvious to modify the woods of Mahaffey to include fairway woods having a loft angle of 19-30 degrees in order to have woods which are more accurate than a driver to select from while playing a round of golf. In addition, it would have been obvious to

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modify the head of Mahaffey to include fairway woods in order to utilize that advantages of Mahaffey for fairway woods.

Davis discloses a driver and each of a plurality of fairway woods having an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front wall and the hosel offset is approximately zero (Fig. 12). In view of the patent of Davis it would have been obvious to modify the set of woods of Mahaffey to have a driver and each of a plurality of fairway woods having an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front wall and the hosel offset is approximately zero in order provide a set of woods to a professional who does not need an offset to maintain his hand forward of the face at impact.

Miyamoto discloses fairway woods having a volume less than 300 cc (Table 2). In view of the patent of Miyamoto it would have been obvious to modify the set of woods of Mahaffey to have fairway woods having a volume less than 300 cc in order to utilize volumes for a set of fairway woods used in the market place.

Sacco discloses a plurality of irons having a front wall, a bottom wall extending rearward from a bottom end of a front wall, a top wall extending rearward from a top end of a front wall (Figs. 6-7), and a loft from 29-60 degrees (Col. 6, Lns. 40-46) having an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front wall and the hosel offset is approximately zero (Col. 7, Lns. 7-10). In view of the patent of Sacco it would have been obvious to modify the set of clubs of Mahaffey to have a plurality of irons having a front wall, a bottom wall extending

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rearward from a bottom end of a front wall, a top wall extending rearward from a top end of a front wall and a loft from 29-60 degrees having an equal hosel offset as measured from a farthest front portion of the hosel to a farthest front portion of the front wall and the hosel offset being approximately zero in order provide irons with different ranges than woods for a professional who does not need an offset to maintain his hand forward of the face at impact.

15. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mahaffey in view of Uchiyama, JP 2000-15765, Chappell, Davis, Sacco and Miyamoto as applied to claims 1 and 3 above, and further in view of Burrows.

Mahaffey lacks a driver and plurality of fairway woods composed of stainless steel. Burrows disclose metal type wood heads (Col. 1, Lns. 52-62) being composed of stainless steel or titanium alloy (Col. 1, Lns. 63-67). In view of the patent of Burrows it would have been obvious to modify the woods of Mahaffey to be composed of stainless steel or titanium alloy in order to utilize the advantages of these materials for a wood head.

16. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mahaffey in view of Uchiyama, JP 2000-15765, Chappell, Davis, Sacco and Miyamoto as applied to claims 1 and 3 above, and further in view of Kilshaw.

Mahaffey lacks a driver and each of the plurality of fairway woods having an equal face progression. Kilshaw discloses a set of wood shafts having the same tip

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external diameter (Tables 2-3). In view of the patents of Kilshaw and Davis it would have been obvious to have a driver and each of the plurality of fairway woods having an equal face progression in order to use the same size hosel for each of the woods in a set and to reduce the different number of parts needed to be designed and manufactured for a set of woods.

Response to Arguments

17. The argument that JP 5-317465 discloses a head having an interior filled with a filler is agreed with. However JP 5-317465 also discloses an embodiment of the cavity being empty ([0007], Verbal Translation). However due to the amendment Wilson and Mahaffey have been now selected as the primary reference. The argument that it is improper to use the reference of JP 2000-157651 and the disclosed inertia due to JP 2000-157651 having a crown on a head and applicant's head does not is disagreed with. Clearly a head not having a crown is going to have an inertia I_{zz} at a center of gravity and the inertia claimed is a suitable selection. There are other ways of weighting a head instead of at a crown to effect the I_{zz} inertia value. In addition, the patents of Wilson and Mahaffey are very similar in shape to applicant's shape. Therefore the attributes due to the shape will be similar. The argument that Davis is improper due to not having an open cavity is disagreed with. Davis was not used to show this teaching. Wilson and Mahaffey show that it is known to have open cavity heads. Davis was used

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to show that it is known to have wood heads in a set having a hosel offset being approximately zero.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Blau whose telephone number is (571) 272-4406. The examiner is available Monday through Friday from 8 a.m. to 4:30 p.m.. If the examiner is unavailable you can contact his supervisor Greg Vidovich whose telephone

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number is (571) 272-4415. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0858. (TC 3700 Official Fax 703-872-9306)

slb/ 19 February 2005



STEPHEN BLAU
PRIMARY EXAMINER